



ANCIENT SKIES

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THE PLAIN OF NAZCA AND THE NOVA PROGRAM

BY GENE M. PHILLIPS, Founder of the Society

In *Ancient Skies* 10:4 we discussed the 90 minute television special "The Case of the Ancient Astronauts," which was shown in the United States in 1978 on Public Broadcasting Stations as one of the Nova series (the "Nova Program") (1). We pointed out that the clear and obvious purpose of the Nova Program was to turn public opinion against Erich von Daniken and the ancient astronaut theory. A News Release (2) and a Teacher's Guide to Nova (3) were issued in advance of the airing of the Program which warned that von Daniken's theories could "impede rational scientific investigation" and appealed to the viewers to maintain a "scientific attitude in judging evidence." Von Daniken was criticized for "distorting" the facts and for failure to provide "precise facts" in his books.

In our earlier article, we examined only one segment of the Nova Program - Easter Island. Now, we will examine another - Nazca; keeping in mind, as we did before, Nova's plea for insisting upon the "scientific method in validating theory" and the use of undistorted, precise facts. As stated before, we obtained a transcript of the Nova Program, which will be referred to herein as the "Transcript." (4)

But first, let us set the stage. The Plain of Nazca lies between the towns of Palpa and Nazca in the Department (equivalent of a state or province) of Ica, approximately 300 miles south of Lima, Peru in South America. The Plain itself extends for about 30 miles North to South and is situated at an altitude of about 2,500 feet, about 40 miles inland from the Pacific Ocean. The entire area is arid, desert country.

The Nazca Culture flourished from approximately 100 BC to 700 AD, when it blended into the Tiahuanaco Culture and after a few hundred years was vanquished by the emerging Incas. The Nazcas were highly artistic and are noted for their exquisite and colorful pottery and textiles, examples of which were found in the thousands of graves which have been excavated in this desert region since 1906.

In 1926, T. Mejia Xesspe discovered some markings on the Nazca Plain while exploring on foot. He could not distinguish any pattern to the markings and walking the various lines and curves, he supposed that they were old, sacred roads constructed by the Nazca culture. Hence, the erroneous assumption of archaeologists of the time that they were "Inca roads."

With the advent of air travel, the true nature of the Nazca markings was revealed in the late 1920's. Airline pilots in low-flying craft were astonished to see the gigantic "drawing board" on the flat desert floor, consisting of perfectly straight lines (some extending for miles); rectangles, triangles, trapezoids and other geometric designs; spirals;

figures of insects, animals, birds and marine life; and other designs which even today cannot be interpreted. This startling archaeological find is now variously referred to as the "Nazca lines," the "Nazca markings," and the "Peruvian ground drawings." (5)

Dr. Paul Kosok of Long Island University in New York became interested in the Nazca lines and went to Peru in 1939 to personally investigate the phenomenon. He came to the early conclusion that the area was a giant, astronomical calendar and that the lines were deliberately laid out with orientation to certain stars, the sun, the moon and to the solstices. In 1946, Kosok turned over his data to the German-born mathematician, Maria Reiche, who had preceded him to Peru, and persuaded her to cease her investigations into other aspects of the coastal cultures of Peru and concentrate on the Nazca lines. Now in her eighties, Miss Reiche has spent the last 40 years of her life investigating the mysterious markings on the Peruvian desert.

In her book *Mystery on the Desert*, (6) published in 1968, Maria Reiche describes certain findings of Kosok which tend to support his calendar theory and she also concluded that the lines had astronomical significance. Her book also explains how most of the markings on the desert floor were made. The entire area, some 30 square miles, is strewn with a covering of dark brown, oxydized stones, ranging in size from small pebbles to quite large stones. Underneath the dark covering, the sandy soil of the desert is of a very light, yellowish color. By removing the stones from an area, the lighter soil is then visible and an outline or shape can be depicted in this manner. Miss Reiche points out that the Nazca region is one of the driest in the world with only a scant rainfall every two years and virtually no wind at ground level; hence, the markings were preserved intact for hundreds of years without damage from the elements.

In the Foreword to the First Edition of her book, Miss Reiche said the main object of the book "is to arouse the interest of a wider public in this fascinating subject." Eight years later, however, in the Foreword to the Second Edition, she complained: "a recent development has to be mentioned, which in some places has caused considerable damage to the figures. Certain entertaining space-phantasies, which have found wide acceptance, have attracted numerous visitors, who have left footprints and car-tracks which threaten to obliterate the drawings completely."

In all fairness, the Pan American Highway, which cuts directly across the Nazca Plain bisecting some of the figures and bringing vehicular traffic onto the Plain, caused the problem.

There are other equally fascinating markings in the nearby Palpa and Ingenio Valleys which are con-

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structured in an entirely different manner. These are areas where the ridges of mountain tops have been completely sliced off to form what appears to be level landing strips at random intervals. But since the Nova Program concentrated primarily on the lines and figures of the Plain itself, we will confine this discussion to that area.

The Nazca lines received world-wide attention in the late 1960's and early 1970's in Erich von Daniken's runaway best-seller, Chariots of the Gods? The book spawned a documentary movie of the same name and a television special entitled "In Search of Ancient Astronauts," both of which graphically portrayed von Daniken's theory that the Nazca markings looked like a gigantic airfield, with runways and approach ramps, and that the site could have been used by visitors from outer space. The phenomenal acceptance of von Daniken's theories by the general public (at last count sales of von Daniken's books world-wide had exceeded 45 million copies), spurred certain members of the scientific community to counter-attack. A committee was formed of leading scientists with the express purpose of denigrating von Daniken and the ancient astronaut theory. Scientific articles and books began to take "cheap shots" at von Daniken whenever the occasion arose, and in some cases, even out of context. An entire book was devoted to a vicious defamation of von Daniken's character and his theories. (7) The counter-attack culminated in the Nova Program, in which the scientific community's "big guns" were rolled out to "shoot down" the impertinent layman, von Daniken. Personalities including Carl Sagan, Isaac Asimov, Thor Heyerdahl and Maria Reiche were presented to "prove" to the viewing public that "von Daniken's thesis rests on inaccuracies, on unrelated facts and false similarities, and that there is "not a single solid piece of evidence behind" the ancient astronaut theory. (Transcript, pp. 32-33).

The Nazca segment of the Nova Program begins with the Narrator quoting from von Daniken's Chariots of the Gods?: "seen from the air the clear cut impression they (the lines) made on me was that of an airfield!" (Transcript, p. 8)

The Narrator ridicules this idea, stating that since the lines run for miles, across hills and over cliff edges "it is a strange pattern for a spaceport." (Note that the word "airfield" was converted to "spaceport.")

It is interesting to note that while ridiculing von Daniken for likening the lines to an airfield, the Nova Program failed to inform the viewers that at about the same time that Chariots was written, Maria Reiche wrote in her book at page 20: "Traveling by air...there appear in different places triangles, rectangles and trapezoids neatly outlined. Many of them are in style and appearance similar to airfields." (Emphasis added)

Then Carl Sagan is shown stating that it is "most remarkable" that space travellers arriving on Earth would need an airfield and that "this is the kind of temporal chauvinism which the whole subject is immersed in, unfortunately." (Transcript, p. 9)

The Nova Program then shows a vehicle mired in the sand, with the Narrator explaining that if anything heavy drives onto a Nazca line "it simply gets stuck." Maria Reiche must have winced when she saw a vehicle on one of "her" lines.

Von Daniken is then allowed to explain his theory that the lines could have been made by spacecraft landing and taking off, not on the runways, but with perhaps an air cushion system which blew away the sand and stones in a straight line as it moved. After the extraterrestrials left, the natives imitated the "gods" by creating other lines in various directions, some pointing to stars from which they believed the gods had come.

The Narrator then says: "But there is another explanation of the lines. It comes from someone who

has spent a lifetime studying them - the German scientist Maria Reiche." (Transcript, p. 9)

The Narrator then informs the viewers that "the Nazca people, a thousand years ago, (made) the lines." This is presented as a fact. But see the May 1975 issue of National Geographic Magazine in an article on the Nazca lines in which the following statement is made at page 716: "Because some of the figures resemble those decorating Nazca pottery, archaeologists attribute the lines to the Nazcas...." Thus, it is a theory that the Nazca people made the lines - not a fact.

Maria Reiche then explains to the viewers:

"You can see the lines are absolutely straight and people have wondered very often how the ancient people could do these straight lines without any engineering instruments. I had an interesting experience which gave me a clue to this. I had a helper who had been a furrow tracer, which means a man who prepares a field for future irrigation and traces absolutely straight very, very long furrows. This fellow had such good eyesight that he could put a stick at a very, very large distance and scrape along with his foot in an absolutely straight furrow. He could do everything that I saw through the telescope of a theodolite, he could see with the naked eyes." (Transcript, p. 10, Emphasis added)

This is truly fascinating and certainly a simple explanation of how the lines were made, perfectly straight, running for great distances, even up to 4 miles in length! But Maria Reiche made no mention of the "furrow tracer" in her book, although the Second Edition was published in 1976 at about the same time that the Nova Program was being prepared. This is what she said in her book at page 79:

"Ancient Peruvians must have had instruments and equipment which we ignore and which together with ancient knowledge were buried and hidden from the eyes of the conquerors as the one treasure which was not to be surrendered." (Emphasis added)

Also, in the National Geographic article of May, 1975 Miss Reiche is quoted as saying: "Throughout the pampa lines stretch for miles, crossing valleys and traversing hills, never swerving from their courses. Surveyors have been astonished by their straightness." (page 720) Again, no mention of the "furrow tracer" with the magical foot.

The Narrator then sets the stage to "prove" that the Nazca lines represent an astronomical calendar by stating "Maria Reiche has shown that many of the long straight lines are connected with the calendar. Some of them, for example, point to the place where the sun sets at the summer or winter solstice - the time when the seasons change." And that "because of the multitude of the lines, the Nazca Plain has been interpreted as a gigantic astronomical calendar." (Transcript, p. 10)

The Narrator suggests that the various animal figures drawn on the Plain are connected with the seasons, such as the giant bird, the huge fish, the giant spider, and the monkey, although he does not enlighten the viewer as to which animal is connected to which season. To support the calendar theory, the Narrator continues with a most incredible account, which must have been written with tongue-in-cheek, and I quote from the Transcript at page 11 (Emphasis has been added):

"And a monkey, which according to Maria Reiche, is the symbol for the coming of rain. This is confirmed by a calendar drawn on a Nazca pot symbolizing the Nazca year, which in ancient times began in June with the arrival of the sun.

"As the sun gets hotter, drought begins, and the dogs starve.

"The year goes on; the continuing drought is symbolized by cats eating human beings.

"The drought grows fiercer - even birds begin to attack people.

"Then things suddenly change: the monkey arrives, (Continued on next page)

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and with him comes the rain. The year has reached a turning point.

"The water fills the river and fish and shrimp appear.

"The animals grow fat and begin to produce young.

"And finally comes the harvest, symbolized by the God of Maize.

"So the Nazca year revolved around the arrival of the monkey. Why this symbol for the coming of rain? The answer is in the stars.

"In the southern hemisphere the constellations of Leo, the Hunting Dogs and the Big Dipper resemble a monkey, with its tail to the left and head to the right.

"The Nazca people drew this monkey on the ground.

"The monkey is connected by a thin line to a broad Nazca line that points directly to the rising of the Big Dipper on December 21st - the time when the rains began."

Maria Reiche then sums up as follows:

"The most important problem of the people who lived in this region and still now is the arrival of the water in the rivers. They have been dry all through the year and agriculture begins with the arrival of the water. They had to prepare their fields for this, and had to know when the water was to be expected. To make it (presumably the monkey) bring more water they would put its image on such a large size on the ground that this divinity (again, presumably the monkey) could see its own picture from above and would be favourably inclined to send more water." (Transcript, pp. 11,12. Emphasis added)

Now let us dissect this fantasy. First, it is incredible that an interpretation of the drawings on a single Nazca pot can be used to confirm the calendar theory. But, let us look closer. According to the Nova Program, the Nazca year began in June with the arrival of the sun. Unless the Earth did a flip-flop in the last thousand years, June marks the beginning of winter in Peru. It is then sunny at Nazca, but quite cool. On June 21st, the sun is just leaving the northern hemisphere to begin its long trek southward and does not arrive at Nazca full-blast for several months.

The mention of the God of Maize at harvest time seems to be a gratuitous offering by Nova to see if the viewers are awake. The Corn God is usually associated with the Mayan Civilization of Mexico and Central America, not with Peru.

Maria Reiche refers to the monkey as a "divinity" and Nova says that the Nazca year revolved around the arrival of this divinity. However, archaeologists who have studied the Nazca Culture do not mention the monkey as a deity of the Nazca people. While the later Incas worshiped the Moon and the Sun, the principal deity of the Nazca Culture was a flying feline. Then, in order of descending importance came a bird, a combination bird-feline, and finally a fish. The Nazca people used vivid colors and artistic representations on their ceramics and textiles to depict their spiritual life and their divinity is always represented as flying, and usually the flying feline figure. (8)

Now let us return to the central thought which the Nova Program wished to leave with its viewers - that the Nazca lines represent a gigantic astronomical calendar. The principal proponents of this theory are Dr. Paul Kosok, Marie Reiche's mentor, and Miss Reiche herself. Dr. Kosok speculated that the lines constituted "an almanac for farmers anxious to predict the return of water to valley streams." (9) Sound familiar?

The May 1975 issue of National Geographic states at page 716 (with emphasis added):

"A 1968 study, financed partly by the National Geographic Society, ascertained that some of the lines do indeed point to solstice positions of the sun and moon in ancient times, as well as to the rising and setting points on the horizon of some

of the brighter stars. But, the study indicates, no more than could be expected by chance.

"And the mystery remains...."

In her book at pages 70, 71 and 78, Maria Reiche discusses solstice lines discovered by Kosok and the moon and star directions. At page 71 she writes:

"In a similar way as the moon-directions found at Stonehenge (England), the numerous lines in Nazca pointing in the corresponding directions, could have been constructed as indicators for extreme positions of moonsets and -rises on both sides of the East-West direction."

Taking up the challenge, Dr. Gerald S. Hawkins, the noted astronomer who proved that Stonehenge is, in fact, an astronomical calendar (10) travelled to Peru to check out the alignment of the Nazca markings with his computer. In his book, Beyond Stonehenge (11) Hawkins reports on his Nazca findings at pages 113 to 117:

"The basic Stonehenge program was used in the computer with adjustment for the new latitude. In this the machine calculates back to any chosen date in prehistory, and prints out whether or not the sun or moon can be seen on the horizon at the end of a line at one of the calendar extremes. For Peru we added a new subroutine, a program for the stars."

"The lines were indeed straight. The average bend was no more than 9 minutes of arc - a 4-yard deviation in the length of a mile. That figure was the limit of accuracy called for in the photogrammetric survey. The ancient lines were in fact laid out straighter than could be measured with modern air-survey techniques. (Maria Reiche had claimed extraordinary eyesight for the ancient Peruvians, with eyes like telescopes!)[This is Dr. Hawkins' parenthetical statement]And this linearity continues for miles....How could this be?One can only speculate."

The first question to be fed into the computer was: "How many lines point to the 18 Stonehenge directions?" Only about 20% of the 186 Nazca directions had some sun-moon orientation and Hawkins concluded that this was no more than chance. Since there was no astronomical explanation for the remaining 80%, Hawkins stated that the Kosok-Reiche theory of deliberate alignment with the sun or the moon is nothing more than "a speculation."

The second question for the computer was: "What stars did the lines point to at any date between 5000 BC and AD 1900?" The machine was fed positions of 45 stars. Again the results showed no more accuracy than could be obtained by mere chance, and Hawkins said "the lines did not point to the stars."

After several other tests with the computer, Hawkins concluded: "The star-sun-moon theory had been killed by the computer....Disappointed, we rejected the astronomical calendar theory." Hawkins then writes at page 132:

"I circulated a preliminary report of the computer findings. The negative result was disappointing, particularly to Dr. Reiche, who had spent so much time on this mystery....I corresponded with her in Germany, and with archaeologists in the United States, United Kingdom and South America. Isaac Asimov chewed over the matter briefly, and then stored the 45-paged, 9-tabled report in his card-index brain."

It was Asimov who warned the Nova Program viewers against irrationalism, stating that "scientists must fight to establish the rational view." (Transcript, p. 27)

Thus the astronomical calendar-almanac theory of Kosok and Reiche was put to rest by painstaking research by scientists using the scientific method, first in 1968 by the National Geographic-sponsored study and later by Dr. Hawkins, only to be resurrected as the scientific "rational view" by Nova. Neither of the studies was mentioned in the Nova Program.

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Erich von Daniken was severely criticized by the Nova Program for not correcting an error about the Nazca lines which appeared in his book Charlots of the Gods? The Narrator said: "After 9 years, it remains uncorrected...many readers are being misled." (Transcript p. 12)

We must ask why Maria Reiche did not correct the errors in her book when the Second Edition was published in 1976. At that time she was fully aware that the National Geographic and Hawkins studies had proved the calendar theory to be wrong. Instead, shortly thereafter she appeared on the Nova Program and presented her then-disproved theories to an unsuspecting public.

The Nova Program ends the segment on Nazca with the following question at pages 12 and 13 of the Transcript: "So does one accept von Daniken's interpretations - or those of someone like Maria Reiche, who has studied the lines for years?"

Now the answer is obvious.

FOOTNOTES:

(1) Shown in Great Britain and the Commonwealth countries as one of the Horizon series.

(2) Nova News Release dated March 8, 1978.

(3) A Teacher's Guide to NOVA, A guide to the classroom use of the NOVA television series on PBS, February-March, 1978. Published by WGBH, Boston.

(4) Transcript of NOVA, The Case of the Ancient Astronauts, published in 1978 by WGBH Educational Foundation.

(5) One of the most complete books on the Nazca markings is Peruvian Ground Drawings (Peruanische Erdzeichen), published by Kunstraum Munchen E.V., 8 Munchen 40, Nikolaistraße 15, West Germany in collaboration with Maria Reiche. The book is full of photos, drawings and scaled charts. The text is in both English and German.

(6) Mystery on the Desert, by Maria Reiche, published by Heinrich Fink GmbH, 7000 Stuttgart 80, West Germany. First Edition 1968; Second Edition 1976. The text is in English, German and Spanish.

(7) The Von Daniken Affair, by Ronald D. Story, with a Preface by Carl Sagan, published privately by Omen Communications, Inc., Tucson, Arizona in 1975. Von Daniken learned that the prestigious publishing house of Harper & Row, New York planned to re-publish the book verbatim under the title "The Space-God Hoax." Von Daniken threatened suit unless certain libelous material was removed from the text. His attorneys were furnished with a galley proof of the book. Negotiations between von Daniken's attorneys and those of the publishing house resulted in the deletion of most of the objectionable material and in changing the title of the book. Harper & Row published the book in 1976 as The Space-Gods Revealed. Unfortunately, Carl Sagan's scathing Preface was used intact as the Foreword.

(8) El Peru Arqueologico, by Dr. Federico Kauffmann Doig, published by Ediciones G.S., Lima, Peru in 1976. This is a condensation of Dr. Kauffmann's monumental work entitled Manual de Arqueologia Peruana, which is one of the most complete books on Peruvian archaeology. The Fifth Edition of the Manual is published by Ediciones Peisa, Lima, Peru. The text of both books is in Spanish.

(9) National Geographic Magazine, May 1975, p.716.

(10) Stonehenge Decoded, by Gerald S. Hawkins, in collaboration with John B. White, published in 1965

by Doubleday & Company, New York. Dr. Hawkins was then an astronomer at the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts; Chairman of the Department of Astronomy at Boston University; and a research associate at the Harvard College Observatory.

(11) Beyond Stonehenge, by Gerald S. Hawkins, published by Harper & Row, New York, in 1973.

ERICH VON DANIKEN's latest book in English is now available in England and Canada in hardcover from Souvenir Press, London. First published in German as Strategie der Götter (The Strategy of the Gods), the English edition is entitled The Gods and Their Grand Design. The book should be available in the United States in hardcover in the fall of 1984 and in paperback in 1985.

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TEN YEARS OF ANCIENT SKIES. This issue of Ancient Skies marks the beginning of the eleventh year of publication. Complete sets of the first ten volumes (60 issues) are available. For particulars, write to the Society Headquarters.

THE ANCIENT ASTRONAUT SOCIETY also publishes a German Edition of Ancient Skies every two months. The text is not a translation of the English Edition, but is completely different. Anyone interested in subscribing to the German Edition may write to: Ancient Astronaut Society, Baselstrasse 10, 4532 Feldbrunnen/SO, Switzerland.

DR. STUART W. GREENWOOD presented a lecture to the UFO Study Group of the British House of Lords in London, England on March 26, 1984.

THE NEXT WORLD CONFERENCE of the Ancient Astronaut Society will be held in Zurich, Switzerland in September, 1985. Details will be announced in Ancient Skies when available.

A MEMBER EXPEDITION to Greece (including the islands) and Turkey is being planned for September, 1985. No details are available at this time. Also, we are contemplating a Member Expedition to Tibet for 1986 or 1987. Anyone interested in participating in either of these expeditions should notify the Society Headquarters.

PETER KRASSA's latest book has been published in German under the title ...Und Kamen Auf Feurigen Drachen by Verlag Kremayr & Scheriau, Vienna, Austria. The book discusses UFOs and ancient astronauts in ancient China.

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